Mosker

RAW SEQUENCE LISTING
PATENT APPLICATION: US/08/475,470A

DATE: 08/01/2000
TIME: 11:58:40

Input Set : A:\Pto.amc

Output Set: N:\CRF3\08012000\H475470A.raw

## SEQUENCE LISTING

## **ENTERED**

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4 (1) GENERAL INFORMATION:
Ć-->
              (i) APPLICANT: Samulski, Richard J.
                             Walsh, Christopher E.
                              Nienhuis, Arthur W.
                              Liu, Johnson M.
            Miller, Jeffrey L.
(ii) TITLE OF INVENTION: Adeno-Associated Virus Vector and
     10
     12
                                       Cis-Acting Regulatory and Promoter Elements Capable of
     13
                                       Expressing At Least One Globin Gene and Methods of Using
     14
                                       the Same for Gene Therapy
           (iii) NUMBER OF SEQUENCES: 20
            (iv) CORRESPONDENCE ADDRESS:
                   (A) ADDRESSEE: Eckert Seamans Cherin & Mellott
     20
                   (B) STREET: 1700 Market Street, Suite 3232
     21
                   (C) CITY: Philadelphia
     22
                   (D) STATE: PA
     23
                   (E) COUNTRY: USA
                   (F) ZIP: 19003
     25
             (V) COMPUTER READABLE FORM:
                   (A) MEDIUM TYPE: Floppy disk
                   (B) COMPUTER: IBM PC compatible
                   (C) OPERATING SYSTEM: PC-DOS/MS-DOS
     30
                   (D) SOFTWARE: PatentIn Release #1.0, Version #1.25
     31
            (vi) CURRENT APPLICATION DATA:
     33
C--> 34
                   (A) APPLICATION NUMBER: US/08/475,470A
C--> 35
                   (B) FILING DATE: 07-Jun-1995
                   (C) CLASSIFICATION:
          (viii) ATTORNEY/AGENT INFORMATION:
                   (A) NAME: Gould, Jr., Lewis F.
(B) REGISTRATION NUMBER: 25,057
     39
     40
                   (C) REFERENCE/DOCKET NUMBER: 115132-4
     41
     43
            (ix) TELECOMMUNICATION INFORMATION:
                  (A) TELEPHONE: 215/575-6000
(B) TELEFAX: 215/575-6015
     44
     45
     48 (2) INFORMATION FOR SEQ ID NO: 1:
             (i) SEQUENCE CHARACTERISTICS:
                   (A) LENGTH: 20 base pairs
                   (B) TYPE: nucleic acid
     52
                   (C) STRANDEDNESS: single
     53
                   (D) TOPOLOGY: linear
     54
W--> 56
            (ii) MOLECULE TYPE: oligonucleotide
            (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
     62 TCGCTTCTGG AACGTCTATC
                                                                                     20
     64 (2) INFORMATION FOR SEQ ID NO: 2:
             (i) SEQUENCE CHARACTERISTICS:
     66
                  (A) LENGTH: 20 base pairs
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DATE: 08/01/2000 PATENT APPLICATION: US/08/475,470A TIME: 11:58:40 Input Set : A:\Pto.amc Output Set: N:\CRF3\08012000\H475470A.raw 68 (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: oligonucleotide W--> 72 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2: 76 78 CACCTTCTTG CCATGTGCCT 20 80 (2) INFORMATION FOR SEQ ID NO: 3: 82 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 24 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single 86 (D) TOPOLOGY: linear (ii) MOLECULE TYPE: oligonucleotide W--> 88 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3: 92 94 CATTGTGATG GACTCCGGAG ACGG 24 96 (2) INFORMATION FOR SEQ ID NO: 4: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 24 base pairs (B) TYPE: nucleic acid 100 (C) STRANDEDNESS: single 101 (D) TOPOLOGY: linear 102 W--> 104 (ii) MOLECULE TYPE: oligonucleotide 108 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4: 110 CATCTCCTGC TCGAAGTCTA GAGC 24 112 (2) INFORMATION FOR SEQ ID NO: 5: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 20 base pairs 115 (B) TYPE: nucleic acid (C) STRANDEDNESS: single 116 117 (D) TOPOLOGY: linear 118 (ii) MOLECULE TYPE: oligonucleotide W--> 120124 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5: 126 GTTGGGAGTG AAGAAACTGC 20 128 (2) INFORMATION FOR SEQ ID NO: 6: (i) SEQUENCE CHARACTERISTICS: 130 (A) LENGTH: 20 base pairs 131 (B) TYPE: nucleic acid 132 (C) STRANDEDNESS: single 133 (D) TOPOLOGY: linear 134 W--> 136 (ii) MOLECULE TYPE: oligonucleotide (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6: 142 TAGCCTCAGA CTCTGTTTGC 20 144 (2) INFORMATION FOR SEQ ID NO: 7: (i) SEQUENCE CHARACTERISTICS: 146 (A) LENGTH: 22 base pairs 147 148 (B) TYPE: nucleic acid 149 (C) STRANDEDNESS: single 150 (D) TOPOLOGY: linear W--> 152 (ii) MOLECULE TYPE: oligonucleotide

RAW SEQUENCE LISTING

RAW SEQUENCE LISTING DATE: 08/01/2000 PATENT APPLICATION: US/08/475,470A TIME: 11:58:40

Input Set : A:\Pto.amc

Output Set: N:\CRF3\08012000\H475470A.raw

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
     158 CTACACCAAC GTAACCTATC CC
                                                                                   22
     160 (2) INFORMATION FOR SEQ ID NO: 8:
              (i) SEQUENCE CHARACTERISTICS:
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                    (A) LENGTH: 22 base pairs
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     164
                    (B) TYPE: nucleic acid
     165
                    (C) STRANDEDNESS: single
     166
                    (D) TOPOLOGY: linear
W--> 168
             (ii) MOLECULE TYPE: oligonucleotide
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
     172
                                                                                   22
     174 TTCTCCGGCG CTTAAAAATG CG
     176 (2) INFORMATION FOR SEQ ID NO: 9:
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     179
                    (A) LENGTH: 15 base pairs
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                    (B) TYPE: nucleic acid
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                    (C) STRANDEDNESS: single
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                    (D) TOPOLOGY: linear
             (ii) MOLECULE TYPE: oligonucleotide
W--> 184
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
     188
                                                                                   15
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     192 (2) INFORMATION FOR SEQ ID NO: 10:
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              (i) SEQUENCE CHARACTERISTICS:
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                    (B) TYPE: nucleic acid
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                    (C) STRANDEDNESS: single
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     198
                    (D) TOPOLOGY: linear
             (ii) MOLECULE TYPE: oligonucleotide
W--> 200
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             (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
                                                                                   20
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     208 (2) INFORMATION FOR SEQ ID NO: 11:
              (i) SEQUENCE CHARACTERISTICS:
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     211
                    (B) TYPE: nucleic acid
     212
                    (C) STRANDEDNESS: single
     213
                   (D) TOPOLOGY: linear
     214
             (ii) MOLECULE TYPE: oligonucleotide
W--> 216
     220
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:
                                                                                   15
     222 AGTAGCATGG CGGGT
     224 (2) INFORMATION FOR SEQ ID NO: 12:
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                   (B) TYPE: nucleic acid
(C) STRANDEDNESS: single
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     229
                   (D) TOPOLOGY: linear
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             (ii) MOLECULE TYPE: oligonucleotide
W--> 232
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                                                                                   21
     240 (2) INFORMATION FOR SEQ ID NO: 13:
              (i) SEQUENCE CHARACTERISTICS:
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RAW SEQUENCE LISTING
                                                                 DATE: 08/01/2000
                       PATENT APPLICATION: US/08/475,470A
                                                                  TIME: 11:58:40
                       Input Set : A:\Pto.amc
                      Output Set: N:\CRF3\08012000\H475470A.raw
                     (A) LENGTH: 25 base pairs
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                     (B) TYPE: nucleic acid
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                     (C) STRANDEDNESS: single
                     (D) TOPOLOGY: linear
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W--> 248
              (ii) MOLECULE TYPE: oligonucleotide
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              (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:
     254 GGAATTCAGG AACCCCTAGT GATGG
                                                                                     25
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                    (A) LENGTH: 21 base pairs
                     (B) TYPE: nucleic acid
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                    (C) STRANDEDNESS: single (D) TOPOLOGY: linear
      261
     262
W--> 264
              (ii) MOLECULE TYPE: oligonucleotide
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              (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:
     270 ACAATGGCCA GGGCCAGGCA G
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                    (B) TYPE: nucleic acid
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                    (C) STRANDEDNESS: single
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                    (D) TOPOLOGY: linear
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W--> 280
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              (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:
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                                                                                     24
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     292
                    (C) STRANDEDNESS: single
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     294
                    (D) TOPOLOGY: linear
W--> 296
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     302 ACCAGGAGTA CCGAAGCTCA CTTG
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                    (B) TYPE: nucleic acid
                    (C) STRANDEDNESS: single (D) TOPOLOGY: linear
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     310
W--> 312
             (ii) MOLECULE TYPE: oligonucleotide
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             (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:
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                                                                                     24
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                    (A) LENGTH: 24 base pairs
     323
     324
                    (B) TYPE: nucleic acid
     325
                    (C) STRANDEDNESS: single
     326
                    (D) TOPOLOGY: linear
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24

20

DATE: 08/01/2000 RAW SEQUENCE LISTING TIME: 11:58:40 PATENT APPLICATION: US/08/475,470A Input Set : A:\Pto.amc Output Set: N:\CRF3\08012000\H475470A.raw W--> 328 (ii) MOLECULE TYPE: oligonucleotide 332 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18: 334 TTATGATGTC TGGATCCGGC CTTG 336 (2) INFORMATION FOR SEQ ID NO: 19: 338 (i) SEQUENCE CHARACTERISTICS: 339 (A) LENGTH: 20 base pairs 340 (B) TYPE: nucleic acid (C) STRANDEDNESS: single 341 342 (D) TOPOLOGY: linear (ii) MOLECULE TYPE: oligonucleotide W--> 344 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19: 348 20 350 TCTCAGCCTA GAGTGATGAC 352 (2) INFORMATION FOR SEQ ID NO: 20: 354 (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: oligonucleotide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:

355

356

357

358

364

366 ATAGTAGCCT TGTCCTCCTC

W--> 360

VERIFICATION SUMMARY DATE: 08/01/2000 PATENT APPLICATION: US/08/475,470A TIME: 11:58:41

Input Set : A:\Pto.amc

Output Set: N:\CRF3\08012000\H475470A.raw

L:6 M:220 C: Keyword misspelled or invalid format, [(i) APPLICANT:] L:34 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:] L:35 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:] L:56 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=1, Value= [oligonucleotide] L:72 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=2, Value= [oligonucleotide] L:88 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=3, Value= [oligonucleotide] L:104 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=4, Value= [oligonucleotide] L:120 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=5, Value= [oligonucleotide] L:136 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=6, Value= [oligonucleotide] L:152 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=7, Value= [oligonucleotide] L:168 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=8, Value= [oligonucleotide] L:184 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=9, Value= [oligonucleotide] L:200 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=10, Value= [oligonucleotide] L:216 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=11, Value= [oligonucleotide] L:232 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=12, Value= [oligonucleotide] L:248 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=13, Value= [oligonucleotide] L:264 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=14, Value= [oligonucleotide] L:280 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=15, Value= [oligonucleotide] L:296 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=16, Value= [oligonucleotide] L:312 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=17, Value= [oligonucleotide] L:328 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=18, Value= [oligonucleotide] L:344 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=19, Value= [oligonucleotide] L:360 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=20, Value= [oligonucleotide]

STATISTICS SUMMARY

DATE: 08/01/2000

PATENT APPLICATION:

US/08/475,470A

TIME: 11:58:41

Input Set : A:\Pto.amc
Output Set: N:\CRF3\08012000\H475470A.raw

Application Serial Number: US/08/475,470A

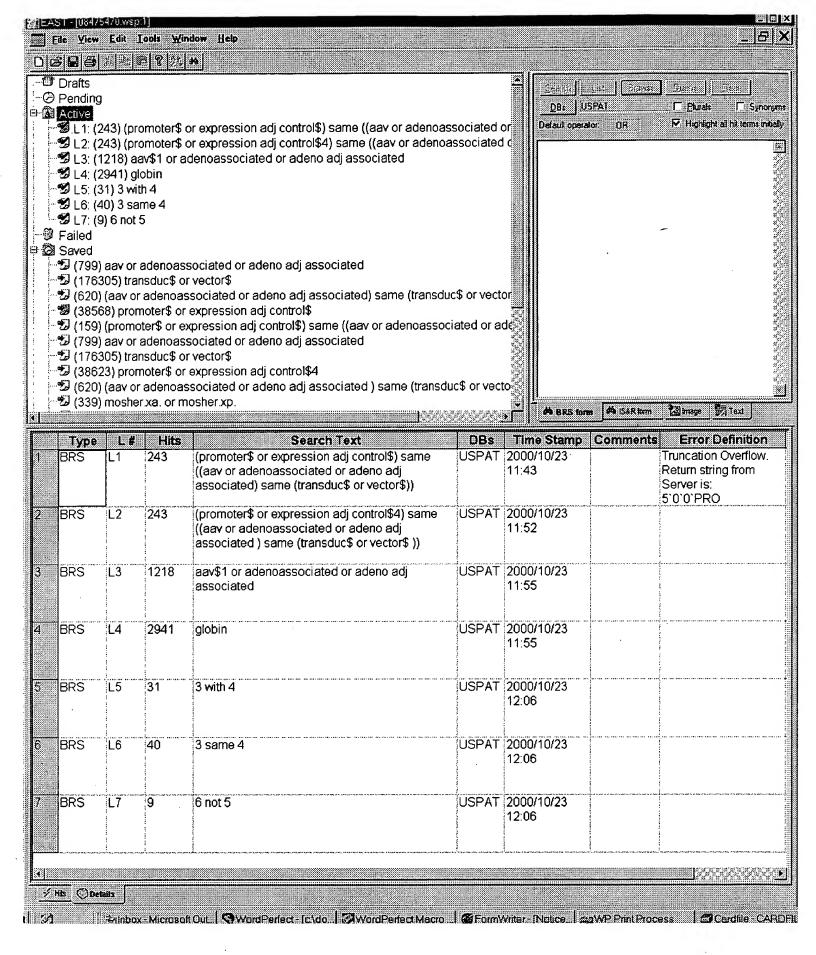
Alpha or Numeric: Alpha

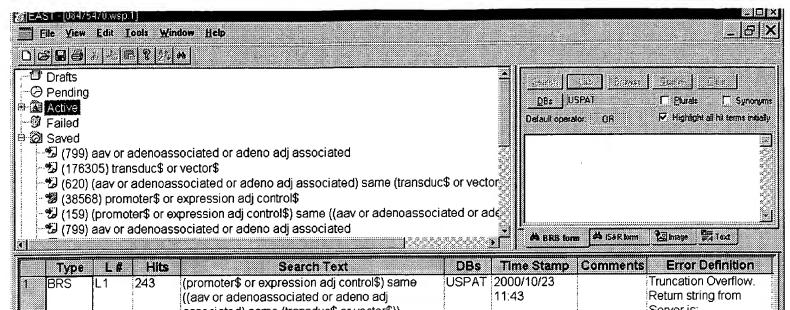
Application Class:

Application File Date: 06-07-1995
Art Unit:
Software Application: PatentIn
Total Number of Sequences: 20.
Number of Errors: 0 Number of Warnings: 20 Number of Corrections: 3

## MESSAGE SUMMARY

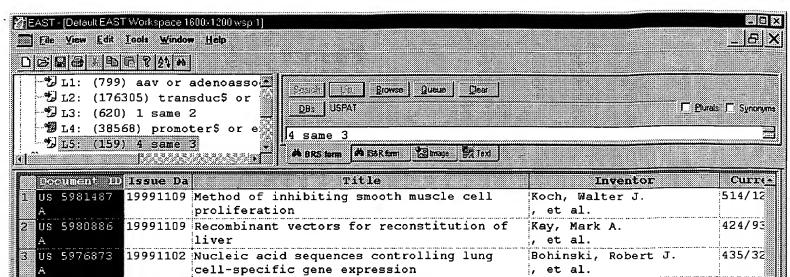
220 C: 3 (Keyword misspelled or invalid format) 246 W: 20 (Invalid value of Alpha Sequence Header Field)





RS RS	L2 L3	243 243 1218 2941	(promoter\$ or expression adj control\$) same ((aav or adenoassociated or adeno adj associated) same (transduc\$ or vector\$))  (promoter\$ or expression adj control\$4) same ((aav or adenoassociated or adeno adj associated ) same (transduc\$ or vector\$ ))  aav\$1 or adenoassociated or adeno adj associated  globin	USPAT	2000/10/23 11:43 2000/10/23 12:08 2000/10/23 12:11		Truncation Overflow. Return string from Server is: 5`0`0`PRO
RS RS	L3 L4	1218	((aav or adenoassociated or adeno adj associated ) same (transduc\$ or vector\$ )) aav\$1 or adenoassociated or adeno adj associated	USPAT	12:08 2000/10/23 12:11		
RS	L4		associated		12:11		
		2941	globin .	USPAT	2000/10/23		
RS			-	and services the	11:55		
	L5	31	3 with 4	USPAT	2000/10/23 12:06		
RS	L6	40	3 same 4	USPAT	2000/10/23 12:06		
RS	L7	9	6 not 5	USPAT	2000/10/23 12:06	and the second seco	
RS	L8	44	(promoter\$ or expression adj control\$4) same ((aav or adenoassociated or adeno adj associated) same (transduc\$ or vector\$))	JPO;	12:09		
RS	L9	40	(aav\$1 or adenoassociated or adeno adj associated) same globin	USPAT	2000/10/23 12:12		
RS	L10	1	(aav\$1 or adenoassociated or adeno adj associated) same globin	JPO;	12:12		
R R	₹\$	RS L7 RS L8	RS L7 9  RS L8 44  RS L9 40	RS L8 44 (promoter\$ or expression adj control\$4) same ((aav or adenoassociated or adeno adj associated) same (transduc\$ or vector\$))  RS L9 40 (aav\$1 or adenoassociated or adeno adj associated) same globin  RS L10 1 (aav\$1 or adenoassociated or adeno adj associated) same globin	USPAT  RS L8 44 (promoter\$ or expression adj control\$4) same ((aav or adenoassociated or adeno adj associated) same (transduc\$ or vector\$))  RS L9 40 (aav\$1 or adenoassociated or adeno adj associated) same globin  RS L10 1 (aav\$1 or adenoassociated or adeno adj associated) same globin  RS L10 1 (aav\$1 or adenoassociated or adeno adj associated) same globin  RS L10 1 (aav\$1 or adenoassociated or adeno adj associated) same globin	12:06     12:06       12:06	12:06     12:06

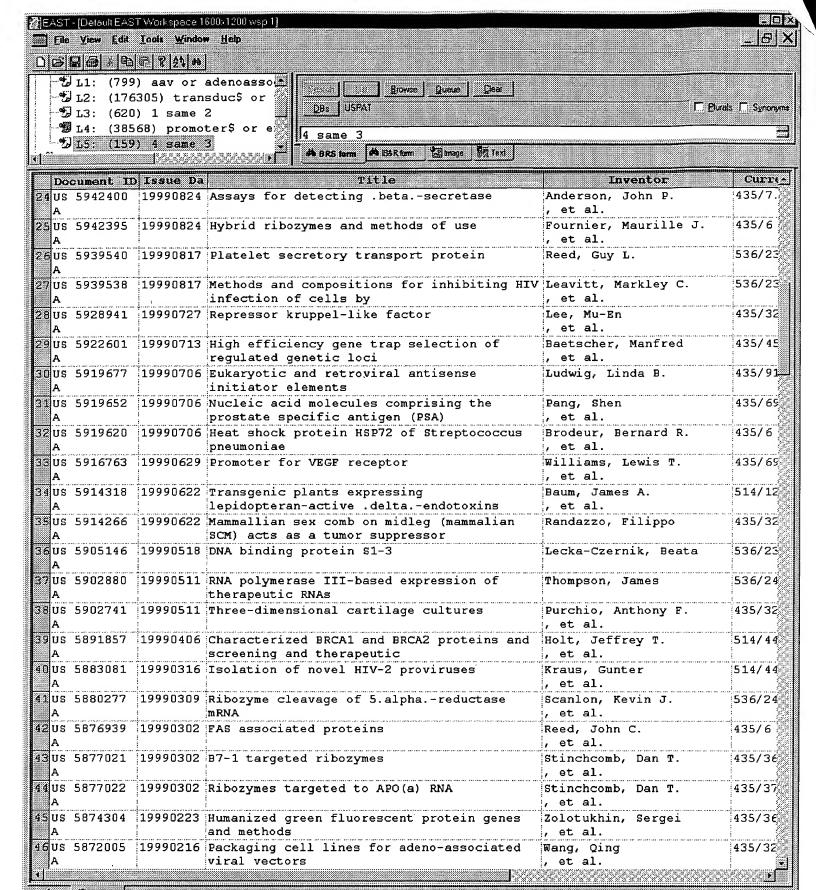
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Ŧ		n ray	an rank in	Issue Da	Title	Inventor	Curre-
					Method of inhibiting smooth muscle cell	Koch, Walter J.	514/12
		A			proliferation	, et al.	
	2	US	5980886	19991109	Recombinant vectors for reconstitution of	Kay, Mark A.	424/93
		A			liver	, et al.	
	3	US	5976873		Nucleic acid sequences controlling lung	Bohinski, Robert J.	435/32
		A.	F074000		cell-specific gene expression Enhancement of cancer cell death	, et al. Lau, Allan S.	435/6
	4	US A	5976600	19991102	Ennancement of Cancer Cell death	, et al.	433/0
	±	n HS	5972705	19991026	Sequence-specific methylation of	Fournier, Maurille J.	435/44
		A	37,2.00		ribonucleic acid	, et al.	
	5	US	5972697		NIMA interacting proteins	Hunter, Tony	435/32
		A.				, et al.	
	7	បន	5972616	19991026	TADG-15: an extracellular serine protease	O'Brien, Timothy J.	435/6
	***************************************	Α			overexpressed in breast and	, et al.	
	Э	US	5972339		Method of eliciting anti-HIV-1 helper T	Walker, Bruce D.	424/18
		A	F0603F0		cell responses	7-1-4-1-1-	425.46
	9	បន	5966/50	19991019	Humanized green fluorescent protein genes and methods	Zolotukhin, Sergei Cet al.	435/6
	1 F	HS	5965790	19991012	SR-BI regulatory sequences and therapeutic	ing tank transfer that transfer the transfer the transfer the final transfer the transfer the transfer transfer transfer the transfer transfer the transfer	800/18
		A	3303.30		methods of use	and	
ľ	11	US	5965441	19991012	HSV/AAV hybrid amplicon vectors	Breakefield, Xandra O.	435/45
1		A				, et al.	
I	12	US	5962325	19991005	Three-dimensional stromal tissue cultures	Naughton, Gail K.	435/35
ı		A			per arrange amende amende and their and their an about an amende amende and their an about an amende an amende a	, et al.	
	13	us	5962313	19991005	Adeno-associated virus vectors comprising a		435/32
		A	rocoocr	10001001	gene encoding a lyosomal	, et al.	405.466
	1.4	US A	5962265	19991002	Human signal transduction serine/threonine kinase	Norris, Tyrrell Errick , et al.	435/69
	-	HS.	5959081	19990928	Zinc binding LIM protein S2-6	Lecka-Czernik, Beata	530/35
		A	3737001	13330320	arne britaing him protein be d	Decka Czernik, Beata	330/32
	16	US	5958768	19990928	Chimeric antiviral agents comprising Rev	Kraus, Gunter	435/37
		A			binding nucleic acids and	, et al.	
I	L7	US	5952467	19990914	NIMA interacting proteins	Hunter, Tony	530/35
ı	Ш.	À				, et al.	
	18	US	5952221		Adeno-associated virus vectors comprising a		435/32
ı.		A 			first and second nucleic	, et al.	405 /00
	LA	US A	5952190		cDNA for fanconi anemia complementation group A	Joenje, Hans , et al.	435/3C
ŀ	210	n IIS	5948647			Ring, David B.	435/65
ľ	*******	A A	0		sites specific for cancer antigens	ning, buttu b.	200, 05
h			5948646		Methods for preparation of vaccines against	Srivastava, Pramod K.	435/69
	2222	A			cancer comprising heat shock		
1	2	បន	5948640			Randazzo, Filippo M.	435/69
L		Α			Asx) acts as a tumor suppressor		
2			5945335	19990831	Adenovirus helper-free system for producing	Colosi, Peter	435/3€
ı		A			recombinant AAV virions		×
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● 14: (38568) promoter\$ or e ・ 15: (159) 4 same 3	4 same 3  ABRS form ABRR turn Winage Market	200
	7/410	Inventor Curre

T	no	numant ID	Issue Da	Title	Inventor	Curre-
4-					Wilson, James M.	435/45
	А			use thereof	, et al.	
46	បទ	5869306	19990209	Gene transfer preparation	Kuma, Hidekazu	435/44
	А		<u> </u>		, et al.	
4	US	5866552		Method for expressing a gene in the absence		514/44
	A		1	of an immune response	, et al.	F36/33
50	US	5866696		Modified adeno-associated virus vector	Carter, Barrie J. , et al.	536/23
	A	ro/2521	:	capable of expression from a  In vitro preparation of tubular tissue	Naughton, Gail K.	424/93
5	LUS	2003231		structures by stromal cell	. et al.	
67	1115	5863541			Samulski, Richard Jude	424/19
ľ	A	3003311	17770120	an capeta contact and an arrangement of the capeta contact and are c	, et al.	
53	បន	5861314	19990119	Adeno-associated viral (AAV) liposomes and	Philip, Ramila	435/37
	А			methods related thereto	, et al.	
5	បន	5861171	19990119	Adeno-associated viral (AAV) liposomes and	Philip, Ramila	424/45
	Α		! !	methods related thereto	, et al.	514/44
5	US	5858990	19990112	Fas ligand compositions for treatment of proliferative disorders	Walsh, Kenneth	514/44
	A	F0F00F4	40000110	The state of the s	Podsakoff, Gregory M.	424/93
50	SUS A	5858351		Methods for delivering DNA to muscle cells using recombinant	, et al.	121/ /-
E,	iic	5858775	<u>.</u>	Adeno-associated virus materials and	Johnson, Philip R.	435/32
	A	3030773	:	methods		
58	US	5858777	19990112	Methods and reagents for regulating	Villeponteau, Bryant	435/32
	А			telomere length and telomerase	, et al.	
59	us	5859195	19990112	Neurofibromatosis gene	Collins, Francis S.	530/35
	Α				, et al.	
60	บร	5859197	19990112	Neurogene	Theill, Lars E.	530/35
	Α				, et al.	435/45
Θ.	US	5856152	19990102	Hybrid adenovirus-AAV vector and methods of use therefor	et al.	422) 47
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